SAMSUNG TECHWIN

# HD-SDI Repeaters

User Manual

SPH-120R

## WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENNINGS ON THE EQUIPMENT.

Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

To prevent injury, this apparatus must be securely attached to the Wall/ ceiling in accordance with the installation instructions.

## CAUTION

**CAUTION**

RISK OF ELECTRIC SHOCK.
DO NOT OPEN

**CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK.
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**


### SALES NETWORK

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AM10-000698A

## EXPLANATION OF GRAPHICAL SYMBOLS

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

## Disconnection Device

Disconnect the main plug from the apparatus, if it’s defected. And please call a repair man in your location.

**When used outside of the U.S., it may be used HAR code with fittings of an approved agency is employed.**

## CAUTION

These servicing instructions are for use by qualified service personnel only.

To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

## IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings, Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/ accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lighting storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

### Product Features

Restore the HD-SDI video input signal before output. Output the restored sign from two different ports at the same time.

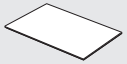
- Output the HD-SDI video input signal with no loss of data.
- Keep the video type of the original source before output.
- Automatically recognize the input video.
- Activated with no additional settings.
- You can extend the transfer range by connecting multiple repeaters.

### What’s Included

Check if the main unit and all the following accessories are included in the product package.

HD-SDI Repeaters

User Manual



Warranty Card

### Recommended Cables

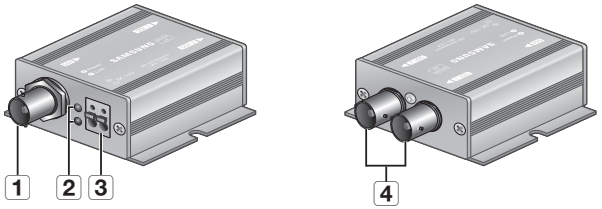
- 5C-FB(T), 5C-HFB(T), L-5CFB
- L-4.5CHD, L-6CHD : HD-SDI specific cable
- Belden : 543945 RG59U, RG-59/U 1505A, RG-6/U 1694A

- The transfer distance of a cable may differ depending on the damping rate of 750MHz. (An attenuation rate of dB/100m < 25dB is recommended.)
- It is recommended to use foaming or high-density foaming insulation.
- The dual- or triple-shield cable is recommended.

- For recommended cable specifications, refer to KSC-3617, domestic standard (5C-FBT) and RG-6/U.
- DC LOOP resistance of 31.3Ω/km or lower is recommended.
- When extending coaxial cable and attaching connector, make sure to use parts of 75Ω impedance.
- Pay attention to cables when working, to avoid cable deformation by pressure.
- When cabling, do not apply excessive force with pulling.
- When cabling I/O cables on rear side of the rack, take care not to bind the tie too tightly. Otherwise, cable's internal/external insulations may be deformed when the cable is twisted after binding. Allow a cable-thick gap when binding ties. Be careful not to bend the cable over its curvature radius.

## Product At a Glance

### Front & Rear View




| Item | | Description |
|---|---|---|
| 1 | SDI Video Input Port | Video input port for the HD-SDI camera. |
| 2 | Status Indicator | **Red Indicator** : When the power is applied, it turns on.<br>**Green Indicator** : When the video source is input, it turns on. |
| 3 | Power In | Connect DC 12V as main power. |
| 4 | Distributed output | Restore the input video and output it from two ports simultaneously. |

## Troubleshooting

- If nothing is displayed on the screen
  - Check if the power source is properly connected and applied.
  - Check if the video signal line is properly connected.

## Specifications

| Item | | Description |
|---|---|---|
| Video(BNC) | Input | 1CH(HD-SDI SMPTE 292M) |
| | Resolution | 720p(25/30/50/60Hz)<br>1080p(25/30Hz)<br>1080i(50/60Hz) |
| | Impedance | 75 ohm |
| Video(BNC) | Output | 2CH (HD-SDI SMPTE 292M) |
| | Resolution | 720p(25/30/50/60Hz)<br>1080p(25/30Hz)<br>1080i(50/60Hz) |
| | Impedance | 75 ohm |
| Audio | Input / Output | Embedded 2ch(Left, Right) |
| Interface | | |
| LED | Power | RED LED |
| | Link | GREEN LED |
| General | | |
| Electrical | Input Voltage/Current | 12 VDC |
| | Power consumption | Max 3W |
| Environmental | Operating Temperature/Humidity | -10°C to +50°C (14°F to + 122°F) / 20%RH to 85%RH |
| | Dimension (W x H x D) | 64.2 X 26.0 X 88.7 mm |
| | Weight | 107g |

## Input & Output

### Input

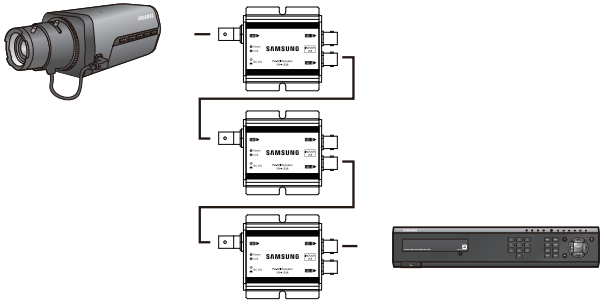
The repeaters support eight types of input.

| | | | | |
|---|---|---|---|---|
| 60Hz | 1920x1080p30 | 1920x1080i60 | 1280x720p60 | 1280x720p30 |
| 50Hz | 1920x1080p25 | 1920x1080i50 | 1280x720p50 | 1280x720p25 |

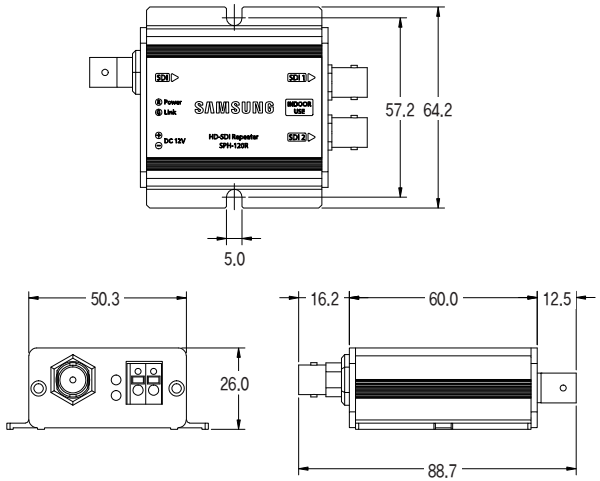
### Output

Output the same video signal as the original input video.

You can output the same video signal as the original source by connecting multiple repeaters.



## Dimension




## Connecting to an other device

### Connecting to an external device

Connect the output port of the HD-SDI camera or other HD-SDI compliant device to the HD-SDI input port of the repeaters.

Connect the repeaters output signal to the HD-SDI to HDMI converter.
If the incoming HD-SDI video contains the audio signal, both video and audio signal will be output just like the original source.

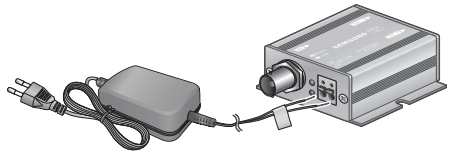
### Transmission Distance

| 항목 | | 내용 | 비고 |
|---|---|---|---|
| HD-SDI Transmission Distance | 5C-FB | Max. 140 m | |
| | L-6CHD | Max. 200 m | HD-SDI Dedicated cable |

- The maximum transferrable distance of HD-SDI video signal depends on the cable manufacturer or installation conditions.
- The video may not played properly if you use a cable beyond the maximum allowable length for the network connection.
- For details, refer to "**Recommended cable**".

### Connecting power

You must connect the adaptor to the repeaters before connecting the power cable to the adaptor. Otherwise, if you connect the power cable first, this may cause an electric shock or damage to the product.
The repeaters has its polarity. Connect the adaptor to the repeaters in the right polarity. Otherwise, it may cause damage to the product.



This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Samsung Techwin cares for the environment at all product manufacturing stages, and is taking measures to provide customers with more environmentally friendly products.
The Eco mark represents Samsung Techwin's devotion to creating environmentally friendly products, and indicates that the product satisfies the EU RoHS Directive.

**Correct Disposal of This Product** (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.